

**Claims**

5     **What is claimed:**

1. The broad method of achieving coherence of the heart rate variability cycle during exercise by facilitating the synchronization of the varying breathing cycle with the varying heart rate variability cycle for purposes of achieving the optimal psycho-physiological state and consequent optimal physical
- 10    performance and experience.
2. The broad system for achieving coherence of the heart rate variability cycle during exercise by facilitating the synchronization of the varying breathing cycle with the varying heart rate variability cycle for purposes of achieving the optimal psycho-physiological state and consequent optimal physical
- 15    performance and experience.
3. The broad method of providing feedback to a human subject during exercise as to when to begin inhalation and when to begin exhalation on the basis of peak negative heart rate and peak positive heart rate, respectively.
4. The broad system of providing feedback to a human subject during
- 20    exercise as to when to begin inhalation and when to begin exhalation on the basis of peak negative heart rate and peak positive heart rate, respectively.
5. The broad method of varying feedback as to when to inhale and when to exhale on the basis of varying heart rate variability periodicity.
6. The broad system of varying feedback as to when to inhale and when to
- 25    exhale on the basis of varying heart rate variability periodicity.
7. The method of enabling and disabling feedback as to when to inhale and when to exhale on the basis of average heartbeat rate stability.
8. The system of enabling and disabling feedback as to when to inhale and when to exhale on the basis of average heartbeat rate stability.
- 30    9. The broad method of providing a fully variable tempo which is in keeping with the heart rate variability cycle and consequently in keeping with the breathing for purposes of synchronizing body movement with heart rate and with breathing cycles.

10. The broad system of providing a fully variable tempo which is in keeping with the heart rate variability cycle and consequently in keeping with the breathing for purposes of synchronizing body movement with heart rate and with breathing cycles.
- 5 11. The method of providing programmability of said tempo generation such that the human subject can optimize the rate of physical motion relative to their heart rate variability and breathing cycles.
12. The system of providing programmability of said tempo generation such that the human subject can optimize the rate of physical motion relative to
- 10 13. The method of providing user selection of what feedback is desired and selection of the form of said feedback including audible, visual, and tactile forms or any combination of the three.
14. The system of providing user selection of what feedback is desired and
- 15 15. selection of the form of said feedback including audible, visual, and tactile forms or any combination of the three.
16. The instantiation of the system in hardware, software, or any combination of hardware or software.
- 20 17. The instantiation of the system in any and all physical form factors expressly including wristwatches, cell phones, portable sports performance devices, odometers, speedometers, exercise machines, bicycles, palm top computers, lap top computers, personal computers, television sets, etc.
18. The application of the present invention to any and all exercise modalities including sport and therapeutic purposes.
- 25 19. The instructive method by which a human subject is to apply the present invention for purpose of achieving coherence of heart rate variability while exercising for the purpose of achieving the optimal psycho-physiological performance and consequent experience.